



WOMEN EMPOWERMENT THROUGH VEDIC MATHEMATICS- A STUDY CONDUCTED AMONG KUDUMBASHREE UNIT MEMBERS OF KERALA

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ABSTRACT

The concept of empowerment as a goal of development projects and programmes has been gaining wider acceptance. By women empowerment would be able to develop self-esteem, confidence, realize their potential and enhance their collective bargaining power. Women's empowerment can be viewed as a continuum of several interrelated and mutually reinforcing components (Marilee, Karl, 1995). Indian Constitution in its fundamental rights has provisions for equality, social justice and protection of women. These goals are yet to be realized. Still women continue to be discriminated, exploited and exposed to inequalities at various levels. Inadequate education and skills development keep economies trapped in a vicious circle of low education, low productivity and low income. Skills development is central to improving productivity. Women self-help groups are at present playing a vital role in the personality and skill development of women in India. Kudumbashree, Launched by the Government of Kerala in 1998 for wiping out absolute poverty from the State is today one of the largest women-empowering projects in the country. The present paper shares the experiences of an initiative taken towards developing skills among the members of Kudumbashree unit through our intellectual traditions of Vedic Mathematics. The findings of the study throw light on the unlimited impact of Vedic One line Mental calculations in capacity enhancement among the participants through improved skills. Thus the study suggests the need of popularizing and implementing our traditional treasure of Vedic Mathematics even in the area of women empowerment.

KEY WORDS: Empowerment, Vedic Mathematics, Kudumbashree unit.

WOMEN EMPOWERMENT IN INDIA

Indian Constitution in its fundamental rights has provisions for equality, social justice and protection of women. These goals are yet to be realized. Still women continue to be discriminated, exploited and exposed to inequalities at various levels. So the concept of empowerment as a goal of development projects and programmes has been gaining wider acceptance. By women empowerment would be able to develop self-esteem, confidence, realize their potential and enhance their collective bargaining power. Women's empowerment can be viewed as a continuum of several interrelated and mutually reinforcing components (Marilee, Karl, 1995). They are: Awareness building about women's situation, discrimination and rights and opportunities as a step towards gender equality. Collective awareness building provides a sense of group identity and the power of working as a group, capacity building and skill development, especially the ability to plan, make decisions, organise, manage and carry out activities to deal with people and institutions in the world around them and participation and greater control and decision making power in the home, community and society. Thus empowerment is a process of awareness and capacity building leading to greater participation, greater decision making power and control and transformative action. The empowerment of women covers both an individual and collective transformation. It strengthens their innate ability through acquiring knowledge, power and experience. The industry and the government need to address skill development in a large way. For a rural development program like the National Rural Livelihood Mission (NRLM) a Make in Village drive with adequate skill development program for optimum use of local resources and sustainable livelihood is necessary.

Inadequate education and skills development keep economies trapped in a vicious circle of low education, low productivity and low income. Skills development is central to improving productivity. In turn, productivity is an important source of improved living standards and growth. One of the powerful approaches to women empowerment and rural entrepreneurship is the formation of Self Help Groups (SHGs) especially among women. Women self-help groups are at present playing a vital role in the personality and skill development of women in India. It is considered that Indian women are generally far behind men in aspects such as entrepreneurship skills, managerial skills, marketing skills etc. A self-help group is a voluntary association of poor women which empowers them in almost all spheres of life.

KUDUMBASHREE

Launched by the Government of Kerala in 1998 for wiping out absolute poverty from the State through concerted community action under the leadership of Local Self Governments, Kudumbashree is today one of the largest women-empowering projects in the country. Kudumbashree - State Poverty Eradication Mission has been designated as the State Rural Livelihood Mission under the NRLM. The Mission has also been designated as a National Resource Organization by the Ministry of Rural Development, for providing support to other States for taking up work under NRLM.

KEY ISSUES IN MICROFINANCE IN KUDUMBASHREE UNITS

Majority of the members in the Kudumbashree units are not well educated and

hence may lack in financial literacy. In situations of various responsibilities of money management such as Managing loans, managing debt, dealings on savings, transactions with Banks, profit management, purchasing of goods and managing day-to-day financial activities, they need help from experts.

STUDIES ON SELF HELP GROUP AND WOMEN EMPOWERMENT

Manjusha (2010) assessed the level of empowerment achieved by the women-folk of Ulladan Tribe of the North Paravur Taluk in Ernakulam District of Kerala. The study is an attempt through Kudumbashree units. The findings show that a significant change has come about in the socio-economic life of the women folk in the Taluk. The study suggested that for future development, training and awareness programmes should be conducted for empowering the poor women in that area.

Kenneth and Seena (2012) studied the impact of various programmes that were introduced in order to raise the women from below poverty line in Puthanvelikkara Grama Panchayat of Ernakulam, Kerala. The results of the study show that economic development is the base for other developments and Kudumbashree units drastically changed economic independence of the women and their living status.

Beevi and Devi (2011) conducted a study with an aim to assess the role of Self Help Groups in empowering rural women and to identify the major constraints faced by women in Kollam District of Kerala. Jaya (2004) evaluated the functioning of SHGs and identified the factors contributing to the successful functioning and sustainability of groups in Kerala.

VEDIC MATHEMATICS

Vedic Mathematics offers a new approach to resolving the current crisis in Mathematics education (Puri & Weinless, 1988; Puri, 1988). It is not simply a collection of new computational techniques; rather, it provides an entirely different approach to mathematical computation, based on pattern recognition (Puri, 1991). Vedic Mathematics provides very easy, one line, mental and superfast methods along with magic speed cross checking system (Puri & Weinless, 1988). As such Vedic Maths is a boon for all competitions. Vedic methods are easy to understand and their variety, speed and ease bring joy in the heart and smile on the face of the students. Williams of London says, "This element of choice in the Vedic System, even of innovation, together with mental approach, brings a new dimension to the study and practice of Mathematics. Vedic Maths with its multiple choices makes maths a playful and interesting subject, which naturally brings frequent smiles on the face and joy in the heart of learners (Puri, 1991; 1986).

WORKING MEMORY CAPACITY

Alan Baddeley defines working memory (WM) as "a brain system that provides temporary storage and manipulation of the information necessary for such complex cognitive tasks as language comprehension, learning, and reasoning" (Alan Baddeley (1992). Working memory refers to a complex cognitive system that is responsible for the storage and processing of information in the short term. Also working memory known as a mental workspace, that involved in controlling, reg-

ulating, and actively maintaining relevant information to accomplish complex cognitive tasks (e.g. mathematical processing)(Ashcraft, (1994)). Working memory capacity (WMC) is essential for important cognitive abilities including reasoning, comprehension and problem solving (Case, (1974)). There is a weight of evidence suggesting that working memory is a good predictor of mathematical skills (Denis et al. (2012)). There is also direct evidence that WMC has an impact on children's ability to perform mathematical tasks at school. Gathercole and co-workers (Gathercole et al.2004) found significant impairments in WMC in a group of children who had scored below the expected level in national mathematics tests at age 7. Moreover, Pickering & Gathercole (2004). have found that the students with high WMC are more capable of solving math word problems compared to those with low WMC.

To perform mental calculations in Vedic Mathematics Learning, learners have to temporally hold and manipulate the digits in the memory system and then find the answers. By doing such activities or exercises, working memory gets sharpened. Because the ability to focus is needed to do well on almost any cognitive task one can name, such as mental calculation, people with higher working memory capacity also do better on any sphere of life.

NEED AND SIGNIFICANCE OF THE STUDY

In India, women constitute nearly 50 percent of national population and a very important human resource for the nation's development. According to the survey report Indian women constitute 47 percent of total urban population. The participation of women in the country's GDP is as low as 8 percent though their work participation was 19.7 percent in 1981. In India according to the Census 2001, the female labour force participation rate in their total population is 25.7 percent but it is 31 percent in rural and 11.6 percent in urban areas. They are engaging in different sectors. SHG consists of economically backward members from homogenous background and hence lack basic education. They can be easily exploited by intermediaries in financial disbursement and marketing of their products.

India has a large number of women SHGs and they are a more vulnerable section of the poor. Equipping them with skill will bring economic freedom. In India traditionally women are responsible for upbringing of children and care taker of old members in the family. A more empowered mother would make a difference to the future generation in the hinterland.

Kudumbashree unit at Nedunganda, Anchuthengu Grama Panchayat, Thiruvananthapuram, Kerala

These women are from different caste groups such as Scheduled Caste (SC), Scheduled Tribes (ST), most backward Caste (MBC) backward caste (BC) and minority groups (Muslims). Most of them are illiterates/semi-literates. Only 15 percent of this population own economic assets, such as weaving looms, fish marketing, cows and goats, or a petty shop business. If they need money, they cannot go to a bank to get a loan, so often their only choice is to get a loan from a local money-lender, who usually charges outrageous interest rates (sometimes more than 100%!). Often such debts cannot be paid off in time, and the individual or the family gets in deeper poverty, and sometimes leads to suicide. The situation is especially poor for women, because they have often little or no economic status, and especially when their husband is working elsewhere, they have to face severe financial hardship. It is essential to impart certain account training to them.

Skill development makes sense when foundation is made strong by imparting the basic R's. It was reported by the Report of Voluntary Operation in Community Planning Commission and Environment (VOICE) Government of India, A Report on the Success and Failure of SHG's in India – Impediments and Paradigm of Success, (2008) that "Motivation training for income-generating activities and technological training for capacity building should be organized by competent agencies with greater seriousness, Training programme on (a) Health education (b) formal education for school going, school dropout children and awareness about prevalent social evils should be given adequate priority". Hence conscientizing women on the intellectual traditions of Vedic Mathematics and empowering them through its mental computational applications for economic literacy, self sufficiency, self reliance and above all better home makers and thus Nation builders is the need of the hour. Here lies the significance of the study.

OBJECTIVES OF THE STUDY

The study was conducted among the Kudumbashree members of Thiruvananthapuram District in the Kerala state. The present study was undertaken with the following objectives:

1. To identify the impact of Vedic Mathematics in enhancing Computational Speed of Kudumbashree members
2. To test the effect of the Supreme power of Vedic Mathematics in stimulating the Working Memory Capacity of adults, especially women. .
3. To empower women by attaining self reliance through Indian intellectual tradition of Vedic Mathematics

HYPOTHESES OF THE STUDY

The following hypotheses were formulated by the investigator to lead the study

1. Vedic Mathematics applications are very much effective in enhancing Computational Speed of Kudumbashree members of Kerala.
2. Vedic Mathematics applications are having the Supreme power in stimulating the Working Memory Capacity of adults, especially women.
3. Vedic Mathematics applications are powerful in empowering women through enhancing their cognitive skills with respect to Computational Speed and Working Memory Capacity

METHODOLOGY

Population and profile of the sample

The study is mainly based on primary data, and the secondary data is used to supplement and support the primary data.

The population of the study is the Kudumbashree members of Thiruvananthapuram District. Awareness classes cum demonstration on select Vedic sutras were carried out covering all areas of Thiruvananthapuram District. The sample population includes those members who were active in the Kudumbashree group of Nedunganda during the period, April 2015- November 2016 and were assembled at a common venue of Sree Narayana Training College, Nedunganda as well in their meeting place weekly. The Kudumbashree members were individually met for collecting accurate data directly. A random sample of 250 members was selected for the study

Table 1 Age –Wise Classification of Respondents Numbers.

Respondents	No.	Percentage
18 – 30 Years	37	15
31 – 42 Years	64	26
43 – 54 Years	120	48
Above 55 Years	29	11
Total	250	100

Design, participants and procedure

A package of select vedic sutras, pre-tested computational speed test, a Working Memory Capacity test and a structured questionnaire prepared in local language were used as tools. Before the intervention, a pre-test was conducted among the group members. At the end, Post-Test was administered and the scores were collected. After an interval of 1 month, a retention test was given without any notice. The same tool was used for administering the retention test. Appropriate statistical technique like Repeated ANOVA, LSD test of post hoc comparison were used for testing the impact of Vedic sutras in attaining pre-determined objectives and interpreted accordingly.

DATA ANALYSIS

Mean values and Standard Deviations of Working Memory Capacity Test scores in pre, post and retention tests of experimental group

Group	N	Mean	SD
Pre Experimental	250	123.27	17.85
Post Experimental	250	39.70	6.26
Retention Experimental	250	39.79	6.27

Summary of Repeated ANOVA of Working Memory Capacity Test scores in pre, post and retention tests of experimental group

Group	Source of variation	Sum of Squares	df	Mean squares	F-ratio
Experimental	Between Groups	562485.07	2	281242.53	2378.00**
	Between Subjects	19096.93	249		
	Error	28143.60	498		
	Total	609725.60	749	118.25	

**Significant at 0.01 level;

*Significant at 0.05 level

Results of LSD Test for significance between pairs of means Working Memory Capacity Test scores of the experimental group

SI No	Pairs	Mean values	Mean Difference
1	Pre-Experimental Post-Experimental	123.27 39.70	83.57**
2	Pre-Experimental Retention Experimental	123.27 39.79	83.48**
3	Post-Experimental Retention Experimental	39.70 39.79	0.09*

**Significant at 0.01 level

Mean values and Standard Deviations of computational speed scores in pre, post and retention tests of experimental group

Group	N	Mean	SD
Pre Experimental	250	17.71	3.48
Post Experimental	250	8.10	0.88
Retention Experimental	250	10.00	0.18

Summary of Repeated ANOVA of Computational Speed scores in pre, post and retention tests of experimental group

Group	Source of variation	Sum of Squares	df	Mean squares	F-ratio
Experimental	Between Groups	6213.94	2	3106.97	716.95**
	Between Subjects	510.20	249		
	Error	1031.39	498	4.33	
	Total	7755.53	749		

**Significant at 0.01 level

Results of LSD Test for significance between pairs of mean scores of Computational Speed Test of experimental group

SI No	Pairs	Mean values	Mean Difference
1	Pre-Experimental Post-Experimental	17.71 8.10	9.61**
2	Pre-Experimental Retention Experimental	17.71 10.00	7.71**
3	Post-Experimental Retention Experimental	8.10 10.00	1.90**

**Significant at 0.01 level

DISCUSSION

When the results of Analysis of Variance of post-test scores on Working Memory Capacity Test and Computational Speed Test of participants were taken, the difference between the means was found to be statistically significant ($F(1,249) = 2378$; $p < 0.01$) and ($F(1,249) = 716.95$; $p < 0.01$). The result clearly gives the evidences that Vedic Sutras are very effective in enhancing Computational Speed and Working Memory Capacity among the sample of study. Research on the effects of Vedic Mathematics on improving Computational Speed includes the works by Nicholas, Williams & Pickles (1984), Hope (1987), Muchlman (1994), and Haridas (2004) who concluded that "Vedic Mathematics provides very easy, one line, mental and superfast methods".

FINDINGS

1. The Vedic Methods are effective in improving Computational speed among the Women Self Help Groups.
2. The practice and application of Vedic Mathematics helps in enhancing the Working Memory Capacity among the Women Self Help Groups.
3. The continuous practice and application of Vedic One line method of computation indirectly empower the women community in their overall personality development

CONCLUSION

Women empowerment is the best strategy for poverty eradication. Rural women, who were regarded as voiceless and powerless started identifying their inner strength, opportunities for growth and their role in reshaping their own destiny. The process of empowerment becomes the signal light to their children, their families and the society at large. In the midst of various skill development programmes which are being successfully conducted by the Government, inclusion of training programmes on Vedic Sutras, our traditional treasure of intellectual culture will surely make them self reliant in all means. It makes incredible changes in our India.

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